APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): August 27, 2007

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: St. Louis, The Bluffs at Twin City - Unnamed Tributary, 2007-415

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State: Missouri County/parish/borough: Jefferson City: Festus
Center coordinates of site (lat/long in degree decimal format): Lat. 38.20511352° **N**, Long. -90.39614549° **W**.
Universal Transverse Mercator: 15
Name of nearest waterbody: Plattin Creek

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Mississippi River
Name of watershed or Hydrologic Unit Code (HUC): Cahokia-Joachim HUC-8

☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
☐ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc…) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

☐ Office (Desk) Determination. Date:
☒ Field Determination. Date(s): August 1, 2007

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Pick List** "*navigable waters of the U.S.*" within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]

☐ Waters subject to the ebb and flow of the tide.
☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. Explain: .

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **Are** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

1. **Waters of the U.S.**

   a. **Indicate presence of waters of U.S. in review area (check all that apply):** [1]

   ☐ TNWs, including territorial seas
   ☐ Wetlands adjacent to TNWs
   ☐ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
   ☒ Non-RPWs that flow directly or indirectly into TNWs
   ☐ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
   ☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
   ☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
   ☒ Impoundments of jurisdictional waters
   ☐ Isolated (interstate or intrastate) waters, including isolated wetlands

   b. **Identify (estimate) size of waters of the U.S. in the review area:**
   Non-wetland waters: 300 linear feet: width (ft) and/or 1.3 acres.
   Wetlands: acres.

   c. **Limits (boundaries) of jurisdiction** based on: **Established by OHWM.**
   Elevation of established OHWM (if known): .

2. **Non-regulated waters/wetlands (check if applicable):**[3]

   ☒ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional. Explain: **Stream A and B contain defined channel bed and banks as well as an ordinary high water mark. However, these stream channels contain man-made concrete rubble check dams at four instream locations to trap sediment for**

[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.
[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).
[3] Supporting documentation is presented in Section III.F.

purposes of reducing sediment entry into a downstream impoundment (see photograph). A berm composed of concrete rubble and soil has also been installed between Stream A and the upper end of the impoundment which further severs the connection between Stream A and B and the impoundment (see photograph). We decline jurisdiction on Stream A and B on the basis that the hydrologic connection between the stream segments and traditional navigable water is disconnected and likewise that any pollutant discharged into Stream A and B would not reach the traditional navigable water due to the installation of these man-made obstructions. See exhibit which indicates approximate check dam locations and berm (all of which are indicated in red).

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. TNW
Identify TNW: .

Summarize rationale supporting determination: .

2. Wetland adjacent to TNW
Summarize rationale supporting conclusion that wetland is "adjacent": .

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody[4] is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. Characteristics of non-TNWs that flow directly or indirectly into TNW

(i) General Area Conditions:
Watershed size: 50 **acres**
Drainage area: 14 **acres**
Average annual rainfall: 29 inches
Average annual snowfall: 12 inches

(ii) Physical Characteristics:
(a) Relationship with TNW:
☐ Tributary flows directly into TNW.
☐ Tributary flows through **3** tributaries before entering TNW.

Project waters are **1 (or less)** river miles from TNW.
Project waters are **1 (or less)** river miles from RPW.
Project waters are **2-5** aerial (straight) miles from TNW.
Project waters are **1 (or less)** aerial (straight) miles from RPW.
Project waters cross or serve as state boundaries. Explain: .

Identify flow route to TNW[5]: The waterbody consists of a 1.3 acre pond that impounded a jurisdictional water of the United States. Water overflows the impoundment through a spillway into a manipulated Stream C channel through a

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[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.
[5] Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.

road culvert, and into a Stream C section located between two industrial areas, then through a culvert supporting a railroad crossing and into a scrub-shrub wetland. Water leaves the wetland area and drains into another roadway culvert and into Plattin Creek. Plattin Creek is a primary tributary to the Mississippi River.
Tributary stream order, if known: First.

(b) General Tributary Characteristics (check all that apply):
Tributary is: ☐ Natural
☐ Artificial (man-made). Explain: .
☒ Manipulated (man-altered). Explain: Tributary has been impounded and downstream reach has been altered by man-altered activities such as channel rerouting and filling.

Tributary properties with respect to top of bank (estimate):
Average width: 1-2 feet
Average depth: 1-2 feet
Average side slopes: **3:1**.

Primary tributary substrate composition (check all that apply):

☒ Silts ☐ Sands ☐ Concrete
☐ Cobbles ☐ Gravel ☐ Muck
☐ Bedrock ☐ Vegetation. Type/% cover:
☐ Other. Explain: .

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: Stream C has been altered by construction of impoundment, spillway, roadside ditching, culverts, and manipulation within existing industrial area.
Presence of run/riffle/pool complexes. Explain: .
Tributary geometry: **Relatively straight**
Tributary gradient (approximate average slope): .05 %

(c) Flow:
Tributary provides for: **Intermittent but not seasonal flow**
Estimate average number of flow events in review area/year: **11-20**
Describe flow regime: Stream contains an intermittent flow regime that is influenced by overflow from a spillway. The lower offsite channel segment is located within the 100 year floodplain of Plattin Creek and the Base Flood Elevation has been determined to be 411 feet above mean sea level. Stream flows through area mapped as being hydric and containing a shallow water table.
Other information on duration and volume: Volume of flow through through the channel is dictated by overflow through the spillway. Lake contains permanent water within the impoundment. Missouri Route 61 highway ditches also diverted to Stream C location. Flow is expected within channel to occur in periods of hours following large storm events.

Surface flow is: **Discrete and confined.** Characteristics: Manipulated channel which flows through a series of alterations described above and into wetlands which contain connection to Plattin Creek which persists throught this tributary system.

Subsurface flow: **Unknown**. Explain findings: .
☐ Dye (or other) test performed: .

Tributary has (check all that apply):
☒ Bed and banks
☒ OHWM[6] (check all indicators that apply):

☐ clear, natural line impressed on the bank ☐ the presence of litter and debris
☐ changes in the character of soil ☐ destruction of terrestrial vegetation
☐ shelving ☐ the presence of wrack line
☐ vegetation matted down, bent, or absent ☐ sediment sorting
☒ leaf litter disturbed or washed away ☐ scour
☐ sediment deposition ☐ multiple observed or predicted flow events
☐ water staining ☒ abrupt change in plant community
☐ other (list):

☐ Discontinuous OHWM.[7] Explain: .

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):
☐ High Tide Line indicated by: ☐ Mean High Water Mark indicated by:
☐ oil or scum line along shore objects ☐ survey to available datum;

[6]A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.
[7]Ibid.

☐ fine shell or debris deposits (foreshore)
☐ physical markings/characteristics
☐ tidal gauges
☐ other (list):
☐ physical markings;
☐ vegetation lines/changes in vegetation types.

(iii) Chemical Characteristics:

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).

Explain: The drainage area of Stream A and B is primarily wooded and undisturbed, however, the channel obstructions sever the potential for runoff to enter into the impoundment. The pond contains the characteristics of a eutrophic pond whose water clarity is relatively clear. The pond overflows into Stream C which flows into Plattin Creek but water was not present during the site visit.

Identify specific pollutants, if known: Possible herbicide applications to treat impoundment for algal blooms. Stream C downstream of the project site receives concrete wash that drains from an adjoining concrete batch plant located near the stream channel.

(iv) Biological Characteristics. Channel supports (check all that apply):

☒ Riparian corridor. Characteristics (type, average width): Riparian zone surrounding pond consists of native hardwoods and manicured lawn. The riparian corridor along Stream C is primarily composed of early successional trees and shrubs such as cottonwood, willow, box elder, and bush honeysuckle.

☐ Wetland fringe. Characteristics: .

☒ Habitat for:

☐ Federally Listed species. Explain findings: .

☐ Fish/spawn areas. Explain findings: .

☐ Other environmentally-sensitive species. Explain findings: .

☒ Aquatic/wildlife diversity. Explain findings: Impoundment contains habitat for fishes that have been stocked and aquatic insects. Stream C located downstream of the impoundment is devoid of aquatic insects and habitat for other terrestrial wildlife until it approaches Plattin Creek.

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW

(i) Physical Characteristics:

(a) General Wetland Characteristics:

Properties:

Wetland size: acres

Wetland type. Explain: .

Wetland quality. Explain: .

Project wetlands cross or serve as state boundaries. Explain: .

(b) General Flow Relationship with Non-TNW:

Flow is: **Pick List**. Explain: .

Surface flow is**: Pick List**

Characteristics: .

Subsurface flow: **Pick List**. Explain findings: .

☐ Dye (or other) test performed: .

(c) Wetland Adjacency Determination with Non-TNW:

☐ Directly abutting

☐ Not directly abutting

☐ Discrete wetland hydrologic connection. Explain: .

☐ Ecological connection. Explain: .

☐ Separated by berm/barrier. Explain: .

(d) Proximity (Relationship) to TNW

Project wetlands are **Pick List** river miles from TNW.

Project waters are **Pick List** aerial (straight) miles from TNW.

Flow is from: **Pick List.**

Estimate approximate location of wetland as within the **Pick List** floodplain.

(ii) Chemical Characteristics:

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: .

Identify specific pollutants, if known: .

(iii) Biological Characteristics. Wetland supports (check all that apply):

☐ Riparian buffer. Characteristics (type, average width): .

☐ Vegetation type/percent cover. Explain: .

☐ Habitat for:

☐ Federally Listed species. Explain findings: .

☐ Fish/spawn areas. Explain findings: .

☐ Other environmentally-sensitive species. Explain findings: .

☐ Aquatic/wildlife diversity. Explain findings: .

3. Characteristics of all wetlands adjacent to the tributary (if any)

All wetland(s) being considered in the cumulative analysis: **1**

Approximately (22) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

Directly abuts? (Y/N)	Size (in acres)	Directly abuts? (Y/N)	Size (in acres)

Summarize overall biological, chemical and physical functions being performed: See Below.

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D: .

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: Although impounded, Stream C contains a hydrologic connection with Plattin Creek, which is a primary tributary to the Mississippi River. Based on the USGS topographic map and August 1, 2007 site visit, Stream C contains a watershed of 39 acres that is hydrologically connected to a relatively permanent water and likewise the receiving traditional navigable water. Based on the conditions of the watershed and instream impoundment it appears the tributary experiences rapid peak flows that will quickly recede following storm events. The lower reach of Stream C located west of Missouri Route 67 contains flow characteristics that are influenced by Plattin Creek through periodic overbank flooding. The tributary is located within the 100 year floodplain of Plattin Creek and is in a location where the base flood elevation is determined to be 411 feet above mean sea level. The Jefferson County Soil Survey depicts the Stream C segment that flows through the floodplain as lying within an area that is entirely mapped as hydric soil with a groundwater table of 0-12 inches. Nonetheless, the volume of water that flows through the tributary is sufficient to transport pollutants to Plattin Creek and subsequently into the Mississippi River. The chemical integrity of the receiving traditional navigable water has the potential to be effected by nutrients, trace metals, organic compounds, fecal material, and pesticides all of which can degrade water quality. Decreased water quality leads to increased expenses for treating drinking water supplies, as well as effects water chemistry which stresses native biota thereby disrupting the food chain. Alterations to the physical environment would reduce the amount of organic carbon transported to both Plattin Creek and into the Mississippi River. A wetland also abuts Stream C and contributes to the overall health of this interconnected system. The physical, chemical, and biological interactions within wetlands are often referred to as wetland functions. These functions include surface and subsurface water storage, nutrient cycling, particulate removal, maintenance of plant and animal communities, water filtration or purification, and groundwater recharge. The wetland abutting Stream C provide the following functions which contribute to the health of the physical, chemical, and biological state of the receiving Traditional Navigable Water, which in this case is the Mississippi River. The wetlands abutting Stream C and identified on the attached map help prevent flooding by temporarily storing water, allowing it to soak into the ground or evaporate. This temporary storage can help reduce peak water flows after a storm by slowing the movement of water into Plattin Creek and ultimately into the Mississippi River. The wetland also stores floodwater which it receives from Plattin Creek during high-water events and as water levels recede

in Plattin Creek the movement of floodwater from the wetland is slowly released to the Mississippi River. Current infrastructure within Tributary C such as a railroad crossing and roadway known as County Road also increase stormwater runoff and floodwater residence times which allows the wetlands to greatly improve water quality before water escapes as groundwater recharge, surface outflow, or through evapotranspiration. Based on the density of vegetation within the wetlands, more water is likely lost from the wetland through evapotranspiration than all other pathways. This characteristic partially is because of an abundance of hydrophytes that increase evapotranspiration above that lost from open-water surfaces. The wetland also releases water into the ground which recharges water tables and underlying aquifers, and extends the period of stream flows in nearby Plattin Creek. As previously stated a shallow groundwater table is present and is expected to persist from fall to early summer. As the land dries, the water table drops, and water stored in the wetland is absorbed into the land surface or evaporates into the atmosphere. During drier summer months, this streamside wetland slowly discharges water into the Stream C and nearby Plattin Creek through groundwater flows (base flow), which is then conveyed to the Mississippi River which assists in sustaining flows in the river. The wetland located along Stream C enhances the decomposition of organic matter and incorporates nutrients back into the food chain. Nutrient retention capability of wetland systems is largely affected by the hydrology of the system, which is a determining factor in the concentration and mass of nutrient imports, exports, and the interaction period between water, vegetation, and substrate. Because energy flows from the lowest levels of the pyramid, detritus sustains much of the biomass and structure of the community. Detrital processing in the wetland releases and transforms nutrients tied up in plant tissues and makes them available for uptake by wetland flora and fauna. Natural hydrological fluctuations enhance energy and nutrient flow in the wetlands and to the Mississippi River. Detritus becomes an important energy source when wetlands are flooded. Inundation triggers the dynamic process of litter decomposition. Likewise, decay rates are often much higher in wetlands than in adjacent uplands, indicating in part the level of activity and the biomass of aquatic biological decomposers. The wetland connected to Stream C contains more of a long-term hydrological regime which is essential to maintaining the balance between litter decay and accumulation and to sustaining the biotic components of detrital processing and wetland productivity. This type of hydrology also influences nutrient cycling in the wetland. Because of leaching and subsequent decomposition, the water column is rich in nutrients for several months after flooding which benefits water quality, food web, and life cycles in the Mississippi River. Based on seasonal and hydrologic variations within the wetland, this wetland can act as a sink, source, or transformer of organic and inorganic forms of Nitrogen as well as Phosphorous and orthophosphates. Hydrophytic vegetation dominates the wetland plant communities and bury large amounts of organic Nitrogen in the form of root stocks and detritus. Rhizospheric plants substantially increase the rate of Nitrogen removal from bottom sediments by increasing the rate of organic Nitrogen decomposition. However, much of the organic Nitrogen available in the wetland substrate is recycled by the hydrophytic vegetation. Inorganic Nitrogen which is transported to the wetland by runoff or floodwaters enriches water columns which results in algal blooms, decreases water transparency, and impedes growth of hydrophytes within waterbodies. The wetland abutting Stream C can process inorganic Nitrogen through a process known as denitrification. Denitrification is the chemical conversion of inorganic Nitrogen to Nitrogen gas that is lost to the atmosphere and the biproduct is then used by the hydrophytes and in essence purifies the water before release back into the Mississippi River. The wetland also functions to trap Phosphorous-laden sediments that enter the wetland boundaries through stormwater runoff or backwater and flooding events through Plattin Creek. The potential for long hydraulic residence times within the wetland and potential large contributions of iron from ground water (that provide many sorption sites for Phosphorous) make the wetland an effective sediment and Phosphorous trap. The abundance of hydrophytes within the wetland areas and subsequent senescence of hydrophytes from seasonal weather changes and hydrologic events can make burial of Phosphorous a substantial sink of Phosphorous in the wetland. Although emergent vegetation increases water clarity in shallower areas, high ionic-content water decreases the duration of high-turbidity episodes caused by runoff and backwater events in open-water areas by increasing the flocculation rate. Water with high ionic-content is influenced by a shallow groundwater table which contributes high concentrations of bivalent cations. Bivalent cations increase flocculation rates of inorganic suspended material. The high bivalent cation content is enhanced by ground water received by the wetlands, which indirectly increases the trapping efficiency of sediment affinitive constituents such as Phosphorous. Therefore, the wetlands abutting Tributary C help prevent the Mississippi River from being affected by downstream sediment loading. The plants suited to grow in these wetlands are uniquely adapted to grow in different degrees of soil saturation or depth of standing water. Hydrologic gradations are zones that tend to be gradual and provide niches for many different plant species with various tolerances to saturated soil conditions. The wetland also processes the leaf litter provided by Tributary C and the surrounding habitats. Litter processing is regulated by environmental factors, microbial activity, the presence and abundance of aquatic invertebrates, and in some wetlands by vertebrate herbivores, such as beavers, muskrats, fishes, and waterfowl. Microbes usually contribute most significantly to litter decay through oxidation of organic matter. Large numbers of invertebrates feed and live on plant litter after microbial conditioning. Detritus is one of several important substrates and energy sources for the wetland invertebrates that in turn provide forage for vertebrates, such as fishes, waterfowl, shorebirds, and wading birds. When their dietary needs for animal proteins are high (e.g., during molt and reproduction), waterbirds forage heavily on invertebrates. Aquatic invertebrates have diverse adaptations for living in seasonally flooded environments, and, without dynamic flooding regimes, many of these organisms are incapable of completing their life cycles, and invertebrates are an important component to the food chain. Various mussel species in the Mississippi River are dependent upon host fishes that feed on invertebrates. The fishes are lured by projections from mussels that taunt fishes into striking so that glochidia (young juveniles) attach to the fishes gills to be transported to various locations in the river until they are able to sustain life on their own terms, detach from the fishes gill and settle into the channel substrate. Other wildlife that use Stream C, the wetland, Plattin Creek, and the Mississippi River include muskrats, minks, beavers, otters, frogs, turtles, salamanders, birds, and fish. Stream C and the abutting wetland can improve water quality by diluting direct and indirect pollutants from runoff, assist in providing flow to contribute to the maintainance of a minimum 9 foot navigation channel for transport of goods which is important to interstate and foreign commerce, and provides processed leaf litter and organic matter which are important to sustaining biologic communities in the Mississippi River.

3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
   ☐ TNWs: linear feet width (ft), Or, acres.
   ☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**
   ☐ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: .
   ☐ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: .

   Provide estimates for jurisdictional waters in the review area (check all that apply):
   ☐ Tributary waters: linear feet width (ft).
   ☐ Other non-wetland waters: acres.
   Identify type(s) of waters: .

3. **Non-RPWs[8] that flow directly or indirectly into TNWs.**
   ☒ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

   Provide estimates for jurisdictional waters within the review area (check all that apply):
   ☒ Tributary waters: **300** linear feet **2**width (ft).
   ☒ Other non-wetland waters: **1.3** acres.
   Identify type(s) of waters: **Pond and Stream C.**

4. **Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**
   ☐ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
   ☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: **.**

   ☐ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

   Provide acreage estimates for jurisdictional wetlands in the review area: acres.

5. **Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**
   ☐ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisidictional. Data supporting this conclusion is provided at Section III.C.

   Provide acreage estimates for jurisdictional wetlands in the review area: acres.

6. **Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.**
   ☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

   Provide estimates for jurisdictional wetlands in the review area: acres.

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[8]See Footnote # 3.

7. **Impoundments of jurisdictional waters.**[9]

As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.

☒ Demonstrate that impoundment was created from "waters of the U.S.," or
☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):[10]

☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.
☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
☐ which are or could be used for industrial purposes by industries in interstate commerce.
☐ Interstate isolated waters. Explain: .
☐ Other factors. Explain: .

Identify water body and summarize rationale supporting determination: .

Provide estimates for jurisdictional waters in the review area (check all that apply):

☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: **.**
☐ Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):

☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
☐ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
☐ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: **.**
☒ Other: (explain, if not covered above): **Stream A and B contain defined channel bed and banks as well as an ordinary high water mark. However, these stream channels contain man-made concrete rubble check dams at four instream locations to trap sediment for purposes of reducing sediment entry into a downstream impoundment (see photograph). A berm composed of concrete rubble and soil has also been installed between Stream A and the upper end of the impoundment which further severs the connection between Stream A and B and the impoundment (see photograph). We decline jurisdiction on Stream A and B on the basis that the hydrologic connection between the stream segments and traditional navigable water is disconnected and likewise that any pollutant discharged into Stream A and B would not reach the traditional navigable water due to the installation of these man-made obstructions. See exhibit which indicates approximate check dam locations and berm (all of which are indicated in red).**

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):

☒ Non-wetland waters (i.e., rivers, streams): **519 linear feet of Stream A and 185** linear feet **of Stream B with an average 6** width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):

☐ Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

SECTION IV: DATA SOURCES.

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[9] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.

[10] **Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.***

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):

- ☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: .
- ☐ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  - ☐ Office concurs with data sheets/delineation report.
  - ☐ Office does not concur with data sheets/delineation report.
- ☒ Data sheets prepared by the Corps: Stream Determination Data Forms August 1, 2007.
- ☐ Corps navigable waters' study: .
- ☐ U.S. Geological Survey Hydrologic Atlas: .
  - ☐ USGS NHD data.
  - ☐ USGS 8 and 12 digit HUC maps.
- ☒ U.S. Geological Survey map(s). Cite scale & quad name:1:24,000 Festus.
- ☒ USDA Natural Resources Conservation Service Soil Survey. Citation:Web Soil Survey Jefferson County.
- ☒ National wetlands inventory map(s). Cite name:Festus.
- ☐ State/Local wetland inventory map(s): .
- ☐ FEMA/FIRM maps: .
- ☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
- ☒ Photographs: ☒ Aerial (Name & Date):Missouri CARES natural resource interactive mapping database.
  or ☒ Other (Name & Date):Photographs retrieved by USACE during site visit on August 1, 2007 .
- ☐ Previous determination(s). File no. and date of response letter: .
- ☐ Applicable/supporting case law: .
- ☐ Applicable/supporting scientific literature: .
- ☐ Other information (please specify): .

B. ADDITIONAL COMMENTS TO SUPPORT JD: .